



# ANALOGUE TO FREQUENCY CONVERTER

TYPE 107-5A

- Performs integration when connected to an external counter
- Wide range of input signals
- Voltage pulse, electromechanical counter or open collector outputs
- Isolated output
- Wall or DIN rail mounting



The 107-5A converts a process signal input (analogue voltage or current) into a pulsed output with respect to time. The output pulse rate is proportional to the magnitude of the analogue input signal.

Choice from a wide range of process input signals is available including non-standard signals. For current inputs, when the plug-in module is removed, signal loops are maintained via a base section mounted shunt resistor. This resistor is matched to the unit for optimum accuracy.

Outputs available are: a 24V pulse suitable for driving an electromechanical impulse counter (back-emf protected), an optically isolated open collector transistor and other voltage pulse types. High frequency outputs of up to 5kHz are also available for special applications.

## TYPICAL APPLICATIONS

- Integration (totalisation) of a quantity from an analogue flow signal, e.g. liquids, heat, electrical, etc.
- Used in conjunction with a 107-7B square root extractor and a counter, recording total volume through a pipeline where the flowrate is measured with a differential flow transmitter.
- Providing a signal for proportional sampling.

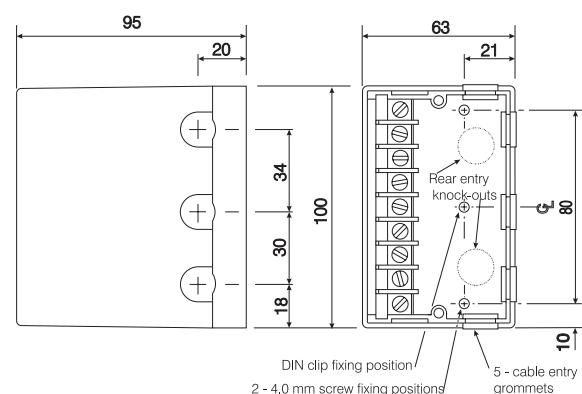
## Information required when ordering

- Input signal type (see specification)
- Output pulse rate at Full Scale

*... or if to be used as an integrator  
i.e. output driving a totaliser / counter*

- Full Scale Rate represented by input signal (e.g. Full Scale Input = 10m<sup>3</sup> per day)
- The integrated quantity represented by one output pulse (e.g. 1 pulse = 1 litre)
- Type of output (see specification)
- Desired pulse width for open collector output option (if standard 60ms is not required).
- Supply voltage and frequency
- Whether DIN rail mounting clip is required

## DIMENSIONS



## SPECIFICATION

### INPUTS

0-10 mA into 100 ohms  
0-20 mA into 50 ohms  
4-20 mA into 62.5 ohms  
0-5v into 300 k ohms  
1-5v into 300 k ohms  
(Other inputs available to order)

### INPUT PROTECTION

Voltage inputs, can withstand 250V RMS.

### CURRENT INPUT SHUNT ERROR

For current inputs, the isolator and a shunt resistor (mounted in the base section of the module) are calibrated as a matched pair. An error of  $\leq \pm 0.1\%$  can be expected if the instrument is used with an unmatched input resistor.

### OUTPUT OPTIONS

The required type to be specified at the time of order.

- Optically isolated open collector transistor,
- Electromechanical counter output - 24 Volt 60ms  
(NB the counter used must have an impedance  $\geq 80$  ohm)
- Other pulse output voltages (e.g. 5V) and pulse widths available to order.

### OUTPUT PULSE RATE

Calibrated as required between the following full scale limits:

- Minimum: 0.0012 pulses per second
- Maximum: 5000 pulses per second

### ENVIRONMENTAL

Temperature range:  
operating -10 to +50 deg C;  
storage -20 to +70 deg C  
Humidity: 0-95% RH non-condensing

### CALIBRATED ACCURACY

Set at 100% to be within  $\pm 0.1\%$  FSD

### LINEARITY ERROR

$\leq \pm 0.1\%$  FSD.

### SUPPRESSION/ ELEVATION ERROR

$\leq \pm 0.1\%$  FSD

### SUPPLY VOLTAGE REJECTION

Output change  $< 0.01\%$  span/% supply change

### STABILITY

Over 24 hours  $\pm 0.05\%$  FSD  
Over 1 year  $\pm 0.1\%$  FSD

### ZERO CUT-OFF OPTION

Set to 5% FSD unless otherwise requested.

### ISOLATION

Input and output are isolated from each other and from the power supply.  
Maximum voltage 50 V RMS or 400 V DC.  
Resistance  $\geq 50 \times 10^6$  ohms measured at 1000 V DC.

### POWER SUPPLY

A LED indicates when the power supply is connected.  
**Standard AC:** 110, 220 or 240V  $\pm 10\%$  50/60Hz; 5VA  
Fuse (internal) 100mA quick-blow (20 x 5mm)  
**Optional DC:** 12, 24 or 48V -10% to + 20%; 3.5W  
Fuse (internal) 250mA anti-surge (20 x 5mm)

### WEIGHT

Approximately 450 grams.

### ENCLOSURE DETAILS

Base: Phenol (black)  
Cover: Polystyrol (light grey)  
Protection: IP40

### SAFETY & EMC

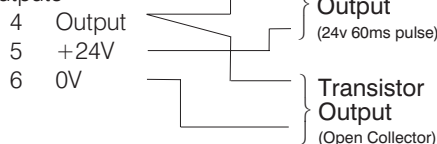
Safety: EN61010-1  
Emissions: EN50081-1  
Immunity: EN50082-1  
CE certified

### TERMINAL CONNECTIONS

Inputs

1	Line	} AC } Mains } Supply	Positive (+) Negative (-) Earth	} DC } Supply } Option
2	Neutral			
3	Earth			

Outputs



Input

- Input Signal (+)
- Input Signal (-)
- (no connection)



**THIS UNIT CAN BE MAINS POWERED, AND ALL INPUTS TO IT MUST BE ISOLATED FROM DANGEROUS VOLTAGES BEFORE THE FRONT COVER IS REMOVED. LIVE TERMINALS WILL BE EXPOSED.**

Continuous development may necessitate changes in these details without notice

# SIL

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